

Building Inventory Options

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Inventory of Buildings

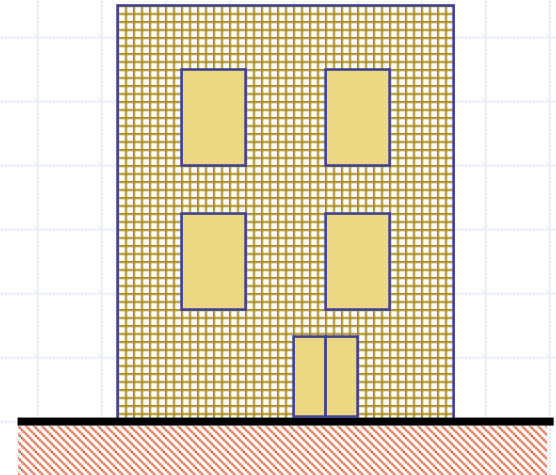
- ♦ Purpose
 - ♦ Categorize buildings into high, medium and low seismic risk
 - ♦ Prioritize risk of buildings
 - ♦ Use to estimate damage potential

$$\text{Risk} = \text{Hazard} + \text{Vulnerability}$$

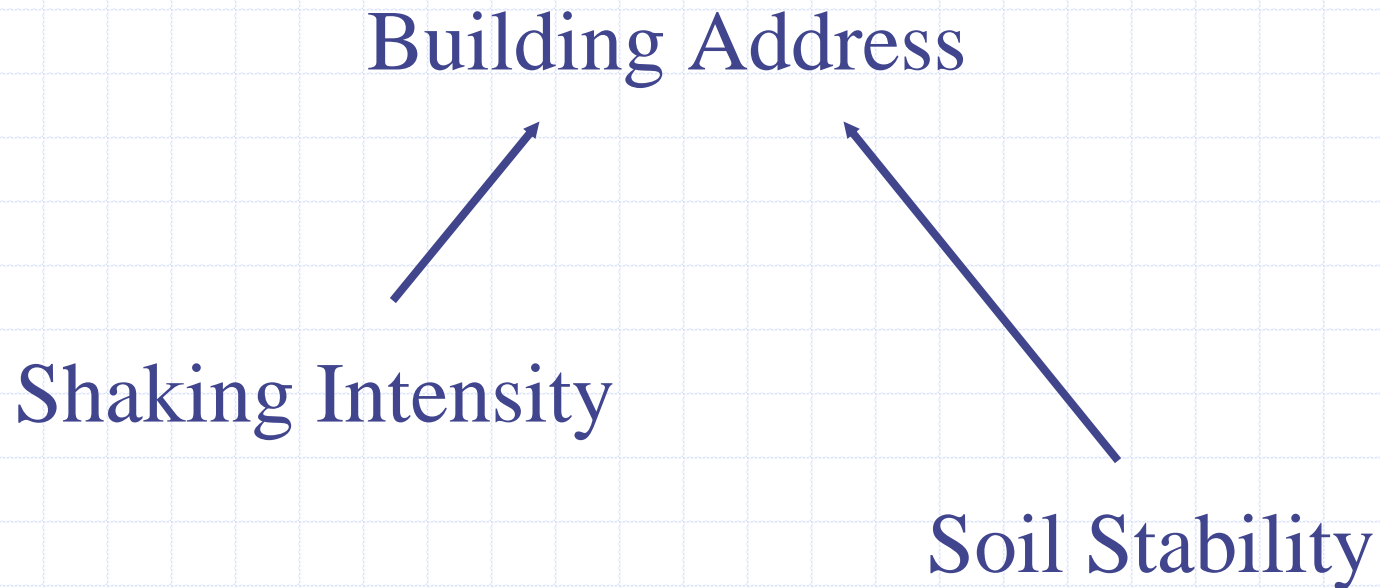
Location

Location

Location

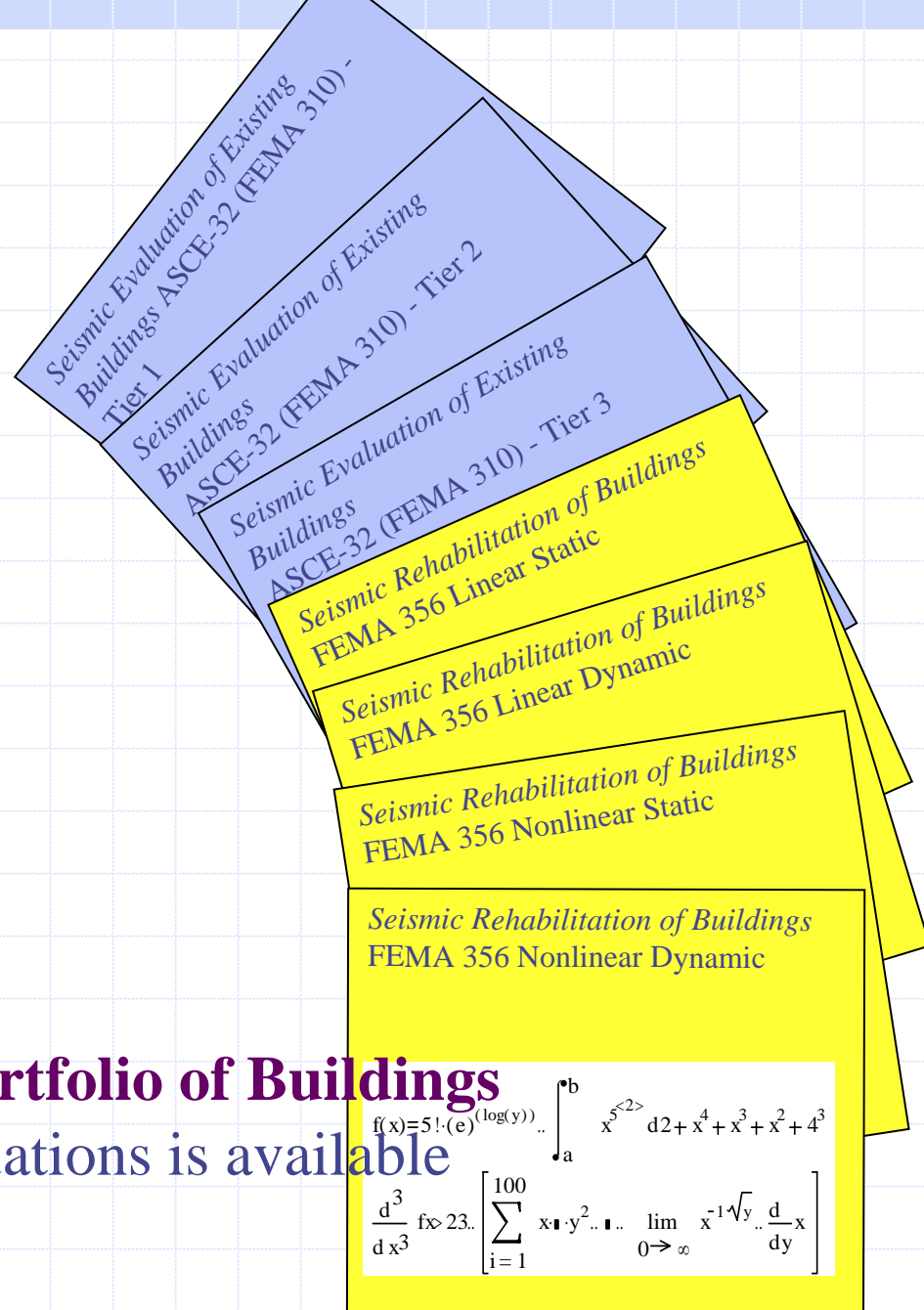
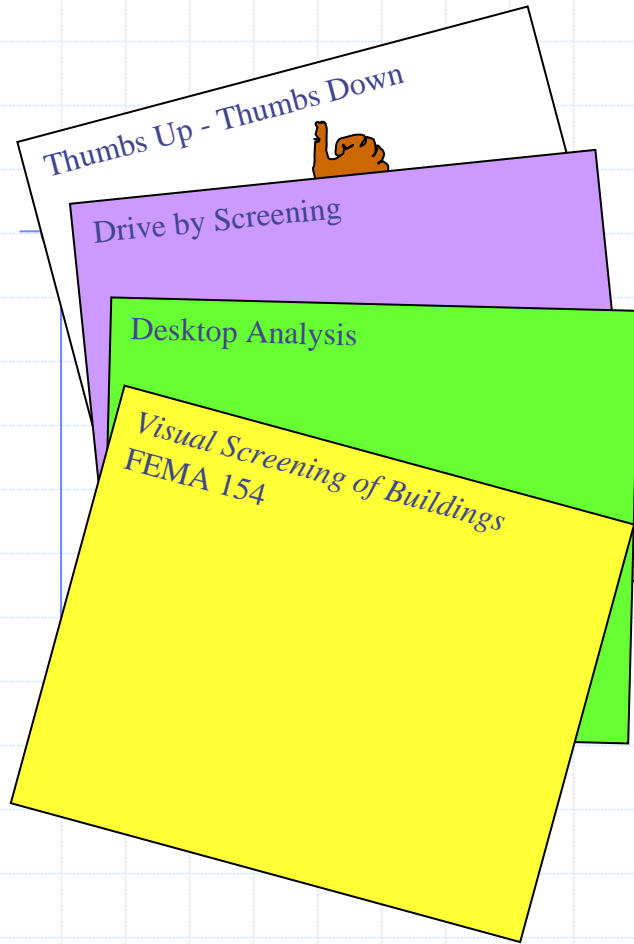


Seismic Hazard



Seismic Vulnerability

- ♦ Key Parameters
 - ♦ Age
 - ♦ Construction Type
 - ♦ No. of Stories
 - ♦ Configuration
 - ♦ Construction Details



Seismic Evaluation of a Portfolio of Buildings

- A suite of types of evaluations is available

Example - Survey Form - limited information

Earthquake and Wind Risk Management Questionnaire			
Building Questionnaire (one sheet per building)			
Site Name:			
Site Address:			
Building No.:			
Building Name:			
Ownership (check one):		Number of Building Occupants:	
<input type="checkbox"/> City of Burbank		<input type="checkbox"/> Less than 5	
<input type="checkbox"/> Leased		<input type="checkbox"/> 6 to 20	
If leased, expiration: Mo. _____ Year: _____		<input type="checkbox"/> 21 - 50	
		<input type="checkbox"/> 50 to 200	
Year Built (Check one):		<input type="checkbox"/> Greater than 200	
<input type="checkbox"/> before 1950			
<input type="checkbox"/> 1951 to 1970		Construction (best estimate):	
<input type="checkbox"/> 1971 to 1990		Foundation:	
<input type="checkbox"/> 1991 to present		<input type="checkbox"/> Wood Piles	
		<input type="checkbox"/> Concrete Piles	
Area:		<input type="checkbox"/> Stone	
<input type="checkbox"/> Occupied by Colgate: _____ square meters		<input type="checkbox"/> Concrete Spread Footings	
<input type="checkbox"/> Occupied by Others: _____ square meters		<input type="checkbox"/> Unknown	
<input type="checkbox"/> No. of Stories above Grade: _____		Exterior Walls:	
		<input type="checkbox"/> Wood framing	
<input type="checkbox"/> No. of Basement Levels: _____		<input type="checkbox"/> Concrete frame with brick infill	
		<input type="checkbox"/> Concrete	
Building Occupancy Type:		<input type="checkbox"/> Concrete Block	
<input type="checkbox"/> Commercial		<input type="checkbox"/> Other	
<input type="checkbox"/> Manufacturing		<input type="checkbox"/> Unknown	
<input type="checkbox"/> Assembly		Floors:	
<input type="checkbox"/> Warehouse		<input type="checkbox"/> Wood	
<input type="checkbox"/> Residential		<input type="checkbox"/> Concrete	
<input type="checkbox"/> Office		<input type="checkbox"/> Concrete on metal deck	
		<input type="checkbox"/> Unknown	
Contents:		Roof:	
<input type="checkbox"/> Liquid Storage in tanks on site		<input type="checkbox"/> Wood	
<input type="checkbox"/> Uninterruptible power supply		<input type="checkbox"/> Concrete	
<input type="checkbox"/> Emergency generator		<input type="checkbox"/> Concrete on metal deck	
		<input type="checkbox"/> Unknown	
Construction Documentation			
Building Plans - Are original plans and details available?			
Architectural:		Structural:	
<input type="checkbox"/> On Site		<input type="checkbox"/> One Site	
<input type="checkbox"/> With Architect		<input type="checkbox"/> With Architect	
<input type="checkbox"/> With Owner		<input type="checkbox"/> With Owner	
<input type="checkbox"/> Don't Know		<input type="checkbox"/> Don't Know	
		Information By: _____	
		Date: _____	

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		<input type="checkbox"/>	50 to 200
Year Built (Check one):		<input type="checkbox"/>	Greater than 200
<input type="checkbox"/>	before 1950		
<input type="checkbox"/>	1951 to 1970		
<input type="checkbox"/>	1971 to 1990		
<input type="checkbox"/>	1991 to present		

Example - Survey Form - limited information

Construction (best estimate):			
<u>Foundation:</u>			
<input type="checkbox"/>	Wood Piles		
<input type="checkbox"/>	Concrete Piles		
<input type="checkbox"/>	Stone		
<input type="checkbox"/>	Concrete Spread Footings		
<input type="checkbox"/>	Unknown		
<u>Exterior Walls:</u>			
<input type="checkbox"/>	Wood framing		
<input type="checkbox"/>	Concrete frame with brick infill		
<input type="checkbox"/>	Concrete		
<input type="checkbox"/>	Concrete Block		
<input type="checkbox"/>	Other		
<input type="checkbox"/>	Unknown		
<u>Floors:</u>			
<input type="checkbox"/>	Wood		
<input type="checkbox"/>	Concrete		
<input type="checkbox"/>	Concrete on metal deck		
<input type="checkbox"/>	Unknown		
<u>Roof:</u>			
<input type="checkbox"/>	Wood		
<input type="checkbox"/>	Concrete		
<input type="checkbox"/>	Concrete on metal deck		
<input type="checkbox"/>	Unknown		

Summary

- ♦ Seismic Evaluation of Portfolio of Buildings - A wide range of thoroughness possible
- ♦ Risk = Hazard + Vulnerability
- ♦ Addresses used to estimate hazard
- ♦ Vulnerability - A few key parameters can provide much of the required information
- ♦ Level of detail - Dependent upon how the information is to be used.